AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1. (Currently Amended) A cylindrical battery comprising:

an electrode group formed from battery electrode plates of a positive electrode and a negative electrode spirally wound with a separator interposed therebetween;

a cylindrical battery case for housing said electrode group; and

at least one of the battery electrode plates being manufactured by a method comprising:

impregnating an entire porous core substrate, which forms the at least one battery electrode plate and is ~~shaped like a~~ thin plate shaped, with an active material;

press working a first surface of said active material impregnated core substrate to form a rail shaped protrusion protruding above pressed portions and defining boundaries with said pressed portions;

removing the active material from said rail shaped protrusion to form said rail shaped protrusion into a core substrate exposed section by applying ultrasonic vibrations to said rail shaped protrusion;

compressing said core substrate exposed section down to an identical level with said pressed portions to produce substantially true straight boundaries between said core substrate exposed section and said pressed portions wherein said substantially true straight

boundaries exhibit a deviation from straight of no more than 0.2 mm; and

cutting said core substrate exposed section along a straight line after said compressing to form said battery electrode plate with a current collector having a straight edge formed by the cutting of said core substrate exposed section and a predetermined width defined by said straight edge and an opposing one of said substantially true straight boundaries.

2. (Original) A cylindrical battery according to claim 1, in which the positive and the negative electrode plates are manufactured by said method.

3. (Canceled)

4. (Previously Presented) The cylindrical battery according to claim 3, wherein said boundaries have a boundary radius in a range of 0.3mm to 0.6 mm

5. (Previously Presented) The cylindrical battery according to claim 1, wherein said pressed portions are pressed by a single press working using a roller having at least a 550 mm diameter producing an elongation less than 1.9%.

6. (Previously Presented) The cylindrical battery according to claim 5, wherein said pressed portions are pressed to approximately half a thickness.

7. (Previously Presented) The cylindrical battery according to claim 6, wherein said pressed portions are pressed by applying 10 ton/cm.

8. (Previously Presented) The cylindrical battery according to claim 7, wherein said roller is advanced at approximate 450 mm/sec.

9. (Previously Presented) The cylindrical battery according to claim 8, wherein said core substrate has a lower surface opposite an upper surface in which said rail shaped protrusion is formed, the rail shaped protrusion has a thickness B which is approximately 1.1 mm extending from said lower surface to a top surface of said rail shaped protrusion, and said pressed portions have a thickness D which is approximately 0.6 mm.

11. (Previously Presented) The cylindrical battery according to claim 1, wherein said impregnating the entire porous core substrate before said work pressing forming said pressed portion is effected so as to produce an impregnation density variation of no more than 1.5% in said pressed portion after forming said battery electrode.

12. (Currently Amended) A cylindrical battery comprising:

an electrode group formed from battery electrode plates of a positive electrode and a negative electrode spirally wound with a separator interposed therebetween;

a cylindrical battery case for housing said electrode group; and

at least one of the battery electrode plates being manufactured by a method comprising:

impregnating an entire porous core substrate, which forms the at least one battery electrode plate and is shaped like a thin plate, with an active material;

press working a first surface of said active material impregnated core substrate to form a rail shaped protrusion protruding above pressed portions and defining boundaries with said pressed portions;

removing the active material from a volume of said active material impregnated core substrate defined by said rail shaped protrusion and extending from said first surface at said rail shaped protrusion to an opposing second surface of said active material impregnated core substrate to form said rail shaped protrusion into a core substrate exposed section by applying ultrasonic vibrations to said rail shaped protrusion so as to result in 4% or less residual active material by weight in said volume of said core substrate exposed section;

compressing said core substrate exposed section down to an identical level with said pressed portions to result in a strength of said core substrate exposed section , after said removing of said active material and said compressing, being substantially equal to a strength of said pressed portions, and substantially true straight boundaries being formed between said pressed portions and said core substrate exposed section after said compressing exhibit a deviation from straight of no more than 0.2 mm; and

cutting said core substrate exposed section after said compressing to form said battery electrode plate with a current collector having an edge formed by the cutting of said core substrate exposed section.

13. (Previously Presented) The cylindrical battery according to claim 12, wherein said ultrasonic vibrations are applied to said rail shaped protrusion with an ultrasonic device producing an ultrasonic amplitude in a range of 25 to 50 microns.

14. (Previously Presented) The cylindrical battery according to claim 13, wherein said core substrate has a lower surface opposite an upper surface in which said rail shaped protrusion is formed, the rail shaped protrusion has a thickness B which is approximately 1.1 mm extending from said lower surface to a top surface of said rail shaped protrusion, said pressed portions have a thickness D which is approximately 0.6 mm, and said ultrasonic device applies said ultrasonic vibrations using a horn having a surface positioned a distance C above said lower surface which is approximately.7 to 0.8 mm.

15. (Previously Presented) The cylindrical battery according to claim 14, further comprising applying vacuum suction devices to said lower surface of said core substrate opposing said ultrasonic device to capture active material dislodged by said ultrasonic vibrations.

16. (Previously Presented) The cylindrical battery according to claim 15, wherein said impregnating the entire porous core substrate before said work pressing forming said pressed portion is effected so as to produce an impregnation density variation of no more than 1.5% in said pressed portion after forming said battery electrode.

17. (Previously Presented) The cylindrical battery according to claim 12, wherein said impregnating the entire porous core substrate before said work

pressing forming said pressed portion is effected so as to produce an impregnation density variation of no more than 1.5% in said pressed portion after forming said battery electrode.

18. (Previously Presented) The cylindrical battery according to claim 12, wherein said pressed portions are pressed to approximately half a thickness by applying 10 ton/cm using a roller advanced at approximate 450 mm/sec.

19. (Canceled)

20. (New) The cylindrical battery according to claim 1, wherein:

said removing the active material including removing the active material from a volume of said active material impregnated core substrate defined by said rail shaped protrusion and extending from said first surface at said rail shaped protrusion to an opposing second surface of said active material impregnated core substrate so as to result in 4% or less residual active material by weight in said volume of said core substrate exposed section; and

said compressing said core substrate exposed section compresses said core substrate exposed section results in a strength of said core substrate exposed section, after said removing of said active material and said compressing, being substantially equal to a strength of said pressed portions.